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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,004	05/21/2007	Takashi Nakai	09852/0204420-USO	1629

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EXAMINER	
MAI, NGOCLAN THI	

ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
05/27/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/596,004	NAKAI ET AL.	
	Examiner	Art Unit	
	NGOCLAN T. MAI	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 May 2006*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/22/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 1-11 are currently under examination, wherein claims 1-4, 7 and 8 are currently amended in applicant's preliminary amendment filed on 5/24/06.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCall et al. (U.S. Patent No. 6,001,150).

With regards to claims 1, 2, and 4-7, McCall et al discloses a raw material powder for compaction in a mold at temperature below 100 C, which is warm molding. See col. 4, lines 8-17 and claims 12-13 and 15. The raw material powder comprises a lubricant mixture for containing boric acid and at least one other powder metallurgy lubricant selected from a group consisting of metal stearate such as zinc stearate, lithium stearate, or lithium 12-hydroxystearate; an amide wax as well as other conventional powder metallurgy lubricant which may. See col. 3, lines 11-15. McCall et al teaches the amount of lubricant mixture is from 0.1 to 5% by weight of the raw material powder. See col. 2, lines 42-49 and col. 3, lines 40-41. The McCall et al further teach the lubricant containing from 5 to 95% by weight of the boric and

from 95% to 5% by weight of the at least one other powder metallurgy lubricant. See col. 2, line 65 to col. 3, line 2. McCall et al also teaches the lubricant mixture generally consist of solid particles, preferably below about 100 microns and that particle that are too large can lead to segregation in the admixture or to voids in the sintered parts made from said admixture. See col. 3, lines 57-61.

McCall et al differs from the claims in that McCall et al does not specifically teach (1) lithium 12-hydroxystearate and (2) the exact mount as recited in the instant claims. Regarding issue (1), base on the above teaching it would have been obvious to one of ordinary skill in the art to have selected lithium 12-hydroxystearate in the listed disclosed by the reference because the reference teaches the same utility over the overlapping range. Applicant is further directed to MPEP 2144.05.

Concerning issue (2), one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the claimed lubricant proportions taught by McCall et al overlap the instantly claimed proportions and therefore are considered to establish a prima facie case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that; "The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages", In re Peterson 65 USPQ2d 1379 (CAFC 2003). Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Concerning claim 3, none of the lubricants disclosed by McCall et al has melting point below the molding temperature of the raw material powder.

4. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCall et al in view of Ozaki et al. (US 2001/0038802 A1).

McCall et al does not teach attaching a hydroxy fatty acid salt (mold lubricant) having an average particle diameter of 50 micron or less on a mold before performing warm molding.

Ozaki et al teaches adhering, i.e., attaching, lubricant having melting point higher than the predetermined temperature of the compacting pressure to the surface of a die that is at room temperature or preheated by electrifying in order to reduce the ejection force used during removing the molded part from the mold. See [0018]. Ozaki et al teaches lubricant powder with at least 90% of the particle having diameter about 50 micron or less are preferred in order to adhere the lubricant with liability. See [0046]. The solid lubricant disclosed can be a metallic soaps such as lithium stearate, lithium laurate, lithium hydroxystearate and calcium stearate. See [0021], [0050] and [0051]. Table 1-1, Compact No. 2, 3 and 6 all exemplify the use of lithium hydroxystearate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to attach die lubricant having the claimed particle size on the surface of the mold used for compaction in the method of making sintered metal part taught by McCall in order to obtain sintered part having high density and low in ejection force as taught by Ozaki et al. It would also have been obvious to one skilled in the art to art to have selected lithium hydroxystearate in the listed disclosed by Ozaki et al because Ozaki et al teaches the same utility over the overlapping range. Applicant is further directed to MPEP 2144.05. Furthermore, it would be

obvious to one skilled in the art to have selected the claimed lithium 12-hydroxystearate or 12-hdyroxy stearate as the die or mold lubricant since it would eliminating the cost of having to acquire two different lubricants in the method of making sintered part of McCall in view of Ozaki et al.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NGOCLAN T. MAI whose telephone number is (571)272-1246. The examiner can normally be reached on 8:30-5:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

n.m.